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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 10/054,542 | 01/22/2002 | Timothy Wayne Crockett | RPS920000103US2 | 7178 |

25299 7590 06/30/2005

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| EXAMINER |
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TRINH, MINH N

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| ART UNIT | PAPER NUMBER |
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3729

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/054,542 | Applicant(s) CROCKETT ET AL. | |
| | Examiner Minh Trinh | Art Unit 3729 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-29, 41 and 42 is/are pending in the application.
4a) Of the above claim(s) 41 and 42 is/are withdrawn from consideration.
5) ☒ Claim(s) 27 is/are allowed.
6) ☒ Claim(s) 21-26, 28 and 29 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 4/19/05 has been fully considered and made of record.

Election/Restrictions

2. Newly submitted claims 41-42 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: That the scope of the newly claims 41-42 directed to a method for reducing impedance of a transmission line in a multi-layer PCB versus a method for reducing impedance within a reference path in a PCB of the originally claimed. Further, the inventions also related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the step of forming a first and second via. The subcombination has separate utility by itself or in other combinations such as for reducing impedance of a transmission line in a multi layer PCB, etc.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 41-42 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 21-26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwong et al in view of Takagi et al. This rejection is set forth in prior Office Action, paragraph 5, dated 12/29/04.

Allowable Subject Matter

5. Claim 27 is allowed.

Response to Arguments

6. Applicant's arguments filed 4/19/05 based on rejected claims 21-26 and 28-29 have been fully considered but they are not persuasive as followed reasons.

Applicant argues that the reference to Kwong is lacking of the teaching where the first via is part of a signal path that carrier a signal from the layer to the second layer . . . to a forth layer, etc., (see "Remarks", page 6, 3rd paragraph). The examiner disagrees because the Kwong reference does teach the forming PCB as recited in the claim and the configuration of a signal path associated with the circuit board (Applicant is referred to the discussion at col. 4, lines 10-44, and Fig. 1 of Kwong, depicts a number of circuit layers 18's and vias that including a signal path (as discussed at col. 4, lines 25-28) for carrying signal from the first to the second layer and so forth, etc.

Further, applicant argues that no motivation to combine the teaching of the prior art references. In response to this, the examiner recognizes that obviousness can only

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be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, each of the reference is on the same field of the present invention and each does teach the forming multilayer PCB having vias and signal path versus reference path and the embedded component for benefit of reducing of space requirement of the substrate.

For all reasons above, Applicant's arguments are not persuasive and are not clearly point out the patentable novelty which they thinks the claims present in view of the state of the art disclosed by the references cited or the rejections made. Therefore, the prior art rejection is maintained for same reasons of the record.

This application contains claims 41-42 drawn to an invention nonelected. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Interviews After Final

7. Applicant notes that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing). Such an interview may be granted if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or

to discuss new limitations which would require more than nominal reconsideration or new search will be denied. See MPEP 714.13 and 713.09.

Conclusion

8. It is noted that any amendment made to the disclosure and the claims. Applicant requires to point out the support provide numeral references to the claimed limitations as well as support in the disclosure (i.e., page and line numbers and reference number associated with from the drawings) for better clarity (See 37CFR 1.111 and section 2163.06 of the MPEP).

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (571) 272-4569.

The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mt
6/23/05



M. Trinh
Primary Examiner Group 3729